

012230



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
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SWA10A-3
Job Sheet 201328



Part No: SWA10A-3

Job Qty: 1 pcs

Part Name: Electric Swivel 10,000 lb Safe Work Load (4,536 Kg)



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 10/1/19

Job Tracking No:

Due Date: 11/1/19

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG SWA10A Rev 3 IPP Rev A 18.01.08 New issue DP Verify DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
110	External Load - Issue SN	1 pcs	11/1/19		0.00	1.00	External Load - 1		Michel 2019-10-3
							External Load - 2		
							External Load - 3		
115	External Load - 2 - B4B	1 pcs	11/1/19		0.00	2.00	External Load - 1 - B4B		Michel 2019-11-21
							External Load - 2 - B4B		
							External Load - 3 - B4B		
120	QC 5	1 pcs	11/1/19		0.00	0.00	QC 5 - 10		DAS 30-9-88 NOV 25-2019
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
							QC 5 - 61		
							QC 5 - 81		
130	Packaging 3-1 - Stock - B4B	1 pcs	11/1/19		0.00	0.00	Packaging 3 - 1 - B4B		
							Packaging 3 - 2 - B4B		
							Packaging 3 - 3 - B4B		
							Packaging 3 - 4 - B4B		
							Packaging 3 - 5 - B4B		
							Packaging 3 - 6 - B4B		



Dart Aerospace Ltd.
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CANADA
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Container No: S233809



Part: SWA10A-3

Job No: 201328

Serial No/Batch: S233809

Revision: 3

Inspector:

Exp Date:

Instructions:

Date: 11/21/19

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					Packaging 3 - 7 - B4B		
					Packaging 3 - 8 - B4B	DAS 30 9:09	NOV 2 5 2019
					Packaging 3 - 9 - B4B		
					Packaging 3 - 10 - B4B		
					Packaging 3 - 11 - B4B		
					Packaging 3 - 12 - B4B		
					Packaging 3 - 13 - B4B		
					Packaging 3 - 14 - B4B		
					Packaging 3 - 15 - B4B		
					Packaging 3 - 16 - B4B		
					Packaging 3 - 17 - B4B		
					Packaging 3 - 18 - B4B		
					Packaging 3 - 19 - B4B		
					Packaging 3 - 20 - B4B		
					Packaging 3 - 21 - B4B		
					Packaging 3 - 22 - B4B		
					Packaging 3 - 23 - B4B		
					Packaging 3 - 24 - B4B		
					Packaging 3 - 25 - B4B		
					Packaging 3 - 26 - B4B		
					Packaging 3 - 27 - B4B		
					Packaging 3 - 28 - B4B		
					Packaging 3 - 29 - B4B		
					Packaging 3 - 30 - B4B		
					Packaging 3 - 31 - B4B		
					Packaging 3 - 32 - B4B		
					Packaging 3 - 33 - B4B		
					Packaging 3 - 34 - B4B		
					Packaging 3 - 35 - B4B		
					Packaging 3 - 36 - B4B	DAS 21 9:09	NOV 2 5 2019
135	DC - 1 - B4B	1 pcs	11/1/19	0.00 0.00	DC - 1 - B4B		
					DC - 2 - B4B	DAS 21 9:09	NOV 2 5 2019
140	QC 21 - FG	1 pcs	11/1/19	0.00 0.00	QC 21 - FG - 21		
					QC 21 - FG - 70	DAS 21 9:09	NOV 2 5 2019
					QC 21 - FG - 53	DAS 21 9:09	NOV 2 5 2019

Part Op 110 - Issue S/N

Descriptions: **115** - Assemble as per DWG. Sheet 1 ***All assembly to be done in accordance with SWA swivel manual*** Engrave T/N And / or S/N number as required Using Marktronic engraver as per DWG. Laser engrave dart logo as per DWG.

120 - (QC5- Inspect part completeness to step on W/O) Engrave T/N And / or S/N number as required Using Marktronic engraver as per DWG.

130 - (Identify as per dwg & Stock Location) CA 011

135 - (Document Control) Photocopy blue file OM & OOPM-SWA10A Rev2

140 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
188-FPSS-1032-5/8	Set Screw	1 Ea (1 ea)	110-External Load - Issue SN	5037083
188-FSCS-1032-5/8	Flat socket cap Screw	4 Ea (4 ea)	115-External Load - 2 - B4B	5216680
C10-28	Swivel Bushing, C10/SWA10	1 pcs (1 ea)	115-External Load - 2 - B4B	5095933
EL-PLUG-F	3-Prong Female Spade Plug	1 Ea (1 ea)	115-External Load - 2 - B4B	5163923
EL-PLUG-M	3-Prong Male Spade Plug	1 Ea (1 ea)	115-External Load - 2 - B4B	5216721
EL314-SJTOW	Long Line Electrical Wire, 14/3 Gauge replace w/t 01004-08-047	6 ft (6 ea)	115-External Load - 2 - B4B	5179682
SWA10A-100	Lower End	1 pcs (1 ea)	115-External Load - 2 - B4B	5088516
SWA10A-1100	Upper DU Bearing	1 pcs (1 ea)	115-External Load - 2 - B4B	5199378
SWA10A-1200	Lower DU Bearing	1 Ea (1 ea)	115-External Load - 2 - B4B	5062772
SWA10A-1300	Roller Thrust Bearing	1 Ea (1 ea)	115-External Load - 2 - B4B	5168027
SWA10A-1400	Circlip	1 Ea (1 ea)	115-External Load - 2 - B4B	5128726
SWA10A-1800	Cover	1 pcs (1 ea)	115-External Load - 2 - B4B	5099112
SWA10A-200	Upper End Swivel	1 pcs (1 ea)	115-External Load - 2 - B4B	5094924
SWA10A-300	Bearing Housing	1 pcs (1 ea)	115-External Load - 2 - B4B	5227495
SWA10A-400	Thrust Washer	1 pcs (1 ea)	115-External Load - 2 - B4B	5158399
SWA10A-500	Semi-Rings	1 pcs (1 ea)	115-External Load - 2 - B4B	5068691
SWA10A-600	Collar	1 pcs (1 ea)	115-External Load - 2 - B4B	5101406
SWA10A-700A	Wire Clamp	2 pcs (2 ea)	115-External Load - 2 - B4B	5111654
SWA6A-1900	1/4" Female Spade Connector	6 Ea (6 ea)	115-External Load - 2 - B4B	5217494
SWA6A-800B	Connector Bushing	1 pcs (1 ea)	115-External Load - 2 - B4B	5194169
SWA6A-900B	Rotary Connector - 3 wire	1 Ea (1 ea)	115-External Load - 2 - B4B	5202399

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
110-External Load - Issue SN	188-FPSS-1032-5/8	1	253	0
115-External Load - 2 - B4B	188-FSCS-1032-5/8	4	124	0
	C10-28	1	36	0
	EL-PLUG-F	1	11	0
	EL-PLUG-M	1	20	0
	EL314-SJTOW	6	0	0
	SWA10A-100	1	5	0
	SWA10A-1100	1	17	0
	SWA10A-1200	1	21	0
	SWA10A-1300	1	10	0
	SWA10A-1400	1	13	0
	SWA10A-1800	1	6	0
	SWA10A-200	1	12	0
	SWA10A-300	1	1	0
	SWA10A-400	1	8	0
	SWA10A-500	1	18	0
	SWA10A-600	1	9	0
	SWA10A-700A	2	23	0
	SWA6A-1900	6	116	0
	SWA6A-800B	1	25	0
	SWA6A-900B	1	10	0

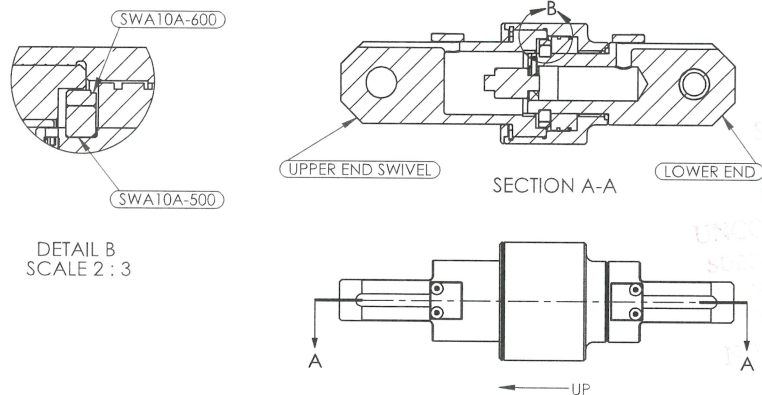
Part Specifications

Specifications could not be found.

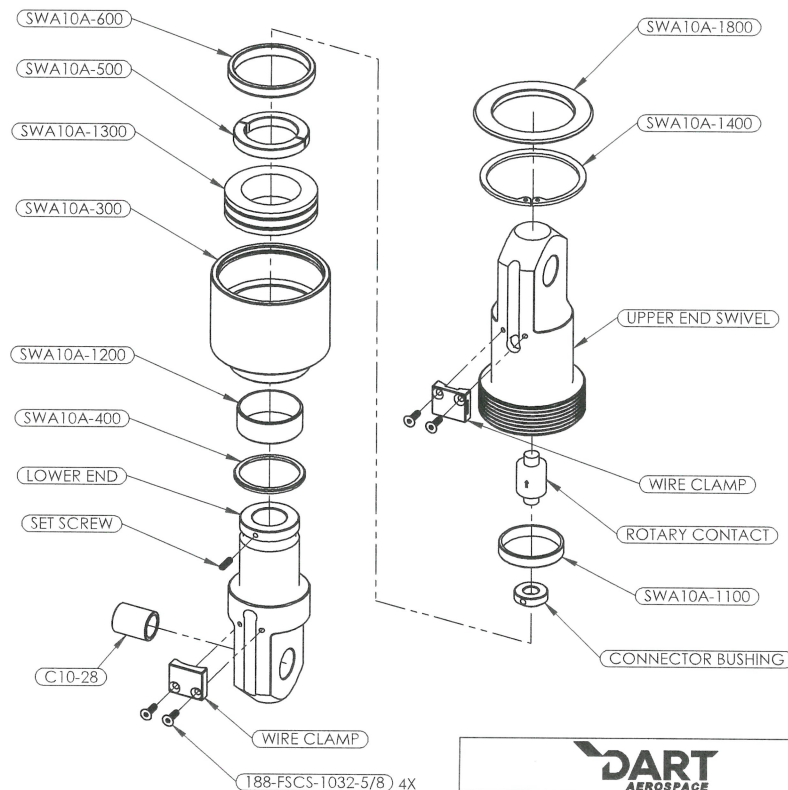
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SEE ATTACHED DEVIATION



REVISIONS			DATE	INITIAL	APPROVE
REV	ECR	DESCRIPTION			
A		REPLACED ID DECAL 600.1318 WITH LASER ETCH	11/16/2012	JAG	
2	15-0146	UPDATED TO NEW DRAFTING STANDARDS. ADDED ENGRAVE NOTES AND DETAILS. SWA6A-1900 CHD QTY'S: ASSY-4 WAS 8 IS 4. ASSY-6 WAS 12 IS 8. ASSY-8 WAS 16 IS 12. SWA6A-2000 ADDED P/N: ASSY-4 QTY 4. ASSY-6 QTY 4. ASSY-8 QTY 4. 188-FPSS-1032-3/B ADDED P/N: ASSY-8 QTY 1. 188-FPSS-1032-1/2 ADDED P/N: ASSY-6 QTY 1. 188-FPSS-1032-5/B CHD QTY'S: ASSY-6 WAS 1 IS 0. ASSY-8 WAS 1 IS 0. EL314-SJTOW, EL414-ARTIC, EL616-ARTIC, EL816-ARTIC CHD QTY'S WAS 6 IS 1. ADDED 6FT TO B/C INFO. ADDED REBUILD ONLY NOTE	6/16/2015	DPD	JAG
3	17-0090	ADDED NOTE 3. SHEET 1. CHD P/N WAS EL816-ARTIC (TRUCK & AUTO SUPPLY) IS #30806 (POLAR WIRE). ADDED P/N C10-28.	5/31/2017	RJC	JAG



QTY	QTY	QTY	QTY	QTY	QTY	Part #	Description	Material	B/O INFORMATION OR SPECIFICATIONS
1	1	1	1	1	1	SWA10A-100	LOWER END	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-110	LOWER END	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-200	UPPER END SWIVEL	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-210	UPPER END SWIVEL	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-300	BEARING HOUSING	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-400	THRUST WASHER	AL-BRONZE 630	
1	1	1	1	1	1	SWA10A-500	SEMI - RINGS	SS 17-4 H1150/H1075	
1	1	1	1	1	1	SWA10A-600	COLLAR	SS 17-4 H1150/H1075	
2	2	2	2	2	2	SWA10A-700	WIRE CLAMP	6061-T6	
1	1	1	1	1	1	SWA10A-700A	WIRE CLAMP	6061-T6	
1	1	1	1	1	1	SWA6A-800A	CONNECTOR BUSHING		
1	1	1	1	1	1	SWA6A-800B	CONNECTOR BUSHING		
1	1	1	1	1	1	SWA6A-800C	CONNECTOR BUSHING		
1	1	1	1	1	1	SWA6A-900A	ROTARY CONTACT	MERCOTAC #230	
1	1	1	1	1	1	SWA6A-900B	ROTARY CONTACT	MERCOTAC #330	
1	1	1	1	1	1	SWA6A-900C	ROTARY CONTACT	MERCOTAC #430	
1	1	1	1	1	1	SWA6A-900D	ROTARY CONTACT	MERCOTAC #630	
1	1	1	1	1	1	SWA6A-900E	ROTARY CONTACT	MERCOTAC #830	
1	1	1	1	1	1	SWA10A-1100	UPPER DU BEARING	BRONZE/OLITE TUBING	
1	1	1	1	1	1	SWA10A-1200	LOWER DU BEARING	(KAMAN MB5020DU)	
1	1	1	1	1	1	SWA10A-1300	ROLLER THRUST BEARING	(KAMAN B1210TN)	
1	1	1	1	1	1	SWA10A-1400	CIRCLIP	(KAMAN N5000 350 SPP)	
1	1	1	1	1	1	SWA10A-1800	COVER	SS 17-4 H1150/H1075	
4	4	4	4	4	4	SWA6A-1900	1/4" FEMALE SPADE CONNECTOR	(MCMaster-CARR #69525K16)	
1	1	1	1	1	1	SWA6A-2000	1/8" FEMALE SPADE CONNECTOR	(MCMaster-CARR #69525K14)	
4	4	4	4	4	4	188-FPSS-1032-5/8	FLAT SOCKET CAP SCREW	S.S. 10-32 x 5/8 (MCMaster-CARR #92210A303)	
1	1	1	1	1	1	188-FPSS-1032-3/8	SET SCREW	S.S. 10-32 x 3/8 (MCMaster-CARR #94355A335)	
1	1	1	1	1	1	188-FPSS-1032-1/2	SET SCREW	S.S. 10-32 x 1/2 (MCMaster-CARR #94355A337)	
1	1	1	1	1	1	188-FPSS-1032-5/8	SET SCREW	S.S. 10-32 x 5/8 (MCMaster-CARR #92311A430)	
1	1	1	1	1	1	EL-PLUG-F	FEMALE PLUG	PE High Density (MCMaster-CARR #7216K6)	
1	1	1	1	1	1	EL-PLUG-M	MALE PLUG	PE High Density (MCMaster-CARR #7216K5)	
1	1	1	1	1	1	EL314-SJTOW	3 WIRE	6 FT. (TEXCAN #EL 314-SJTOW 3/14)	
1	1	1	1	1	1	EL414-ARTIC	4 WIRE	6 FT. (TRUCK & AUTO SUPPLY #EL 414-ARTIC 4/14)	
1	1	1	1	1	1	EL616-ARTIC	6 WIRE	6 FT. (TRUCK & AUTO SUPPLY #EL 616-ARTIC)	
1	1	1	1	1	1	30806	8 WIRE	6 FT. (POLAR WIRE #30806)	
1	1	1	1	1	1	600.1319	UP DECAL		
1	1	1	1	1	1	C10-28	BUSHING	SAE 660 BRONZE 3/4" Ø SHAFT X 1 O.D. X 1-1/4" (MCMaster-CARR #6381K193)	

NOTES:

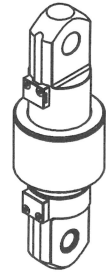
- FOR REBUILD ONLY.
- ALL ASSEMBLY TO BE DONE IN ACCORDANCE WITH SWA SWIVEL MANUAL.
- 8 WIRE STRIP OUTER JACKET & DOUBLE LAYER HEAT SHRINK.

TITLE		SWA10A SWIVEL	
DWG NO.		SWA10A	
REV		3	
MATERIAL		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
FINISH		.XXX ± .005 FRACTIONS ± 1/8	
SPEC		.XX ± .01 ANGLES ± 5° SURFACES ± 125	
DRAWN BY:		GILBERT	
CHECKED:		DD 04/18/2017	
OPPS APPR:		AA 05/05/2017	
QA APPR:		JL 05/10/2017	
APPROVED:		JAG 06/02/2017	
SCALE		1:4	
DATE		11/14/2012	
SHEET		1 OF 2	

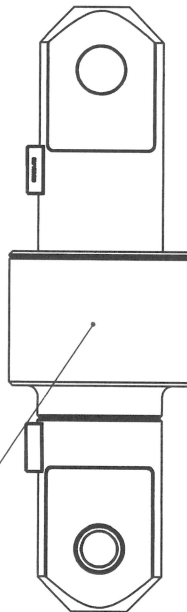
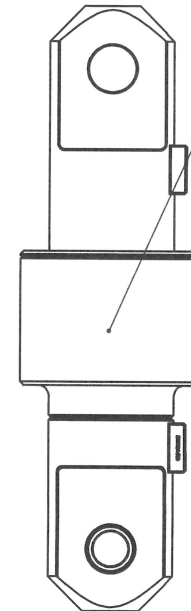
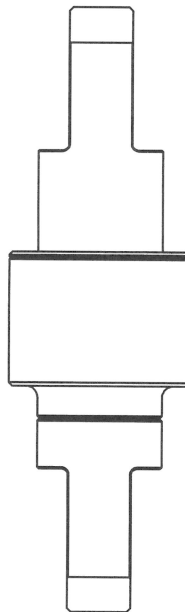
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REVISIONS							
REV	ECR	DESCRIPTION			DATE	INITIAL	APPROVED

SEE ATTACHED DEVIATION



ENGRAVE P/N, S/N, SWL



LASER ENGRAVE DART LOGO

DART AEROSPACE	
TITLE SWA10A SWIVEL	
DWG NO. SWA10A	REV 3
MAT'L	UNLESS OTHERWISE SPECIFIED
HEAT	DIMENSIONS ARE IN INCHES
TREAT	.XXX ± .005 FRACTIONS ± 1/8
FINISH	.XX ± .01 ANGLES ± .5°
SPEC	.X ± .1 SURFACES = 125/√
DRAWN BY: GILBERT	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DD 04/18/2017	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: AA 05/05/2017	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: JL 05/10/2017	USED ON MODEL
APPROVED: JAG 06/02/2017	
SCALE 1:4	DATE 11/14/2012 SHEET 2 OF 2

P/N	Revision	Drawing Specified Wire	Acceptable Alternate Wire
C2	2	MIL-C-27500 11-14416	N/A
C3	2	MIL-C-27500 11-14417	N/A
C10	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C15	2	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C20	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C45	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C60	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
C250	C	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-2	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-3	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA3-4	3	EL 414-ARTIC 4/14	Texcan 01121-744A5
SWA6A-2	E	Texcan 01121-724AM	N/A
SWA6A-3	E	Texcan 01121-734A5 or 01004-08-047	N/A
SWA6A-4	E	Texcan 01121-744A5	N/A
SWA6A-6	E	Texcan 04121-764A5	N/A
SWA6A-8	E	Texcan 12701-08-014 or McMaster 7081K38	N/A
SWA10A-2	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA10A-3	3	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA10A-4	3	EL 414 ARTIC 4/14	Texcan 01121-744A5
SWA10A-6	3	EL 616 ARTIC	Texcan 04121-764A5
SWA10A-8	3	Polar Wire 30806	Texcan 12701-08-014 or McMaster 7081K38
SWA15A-2	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA15A-3	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SWA15A-4	1	EL 414 ARTIC 4/14	Texcan 01121-744A5
SWA15A-6	1	EL 616 ARTIC	Texcan 04121-764A5
SWA15A-8	1	EL 816 ARTIC	Texcan 12701-08-014 or McMaster 7081K38
SAW25A-2	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SAW25A-3	1	3/14 SJTOW	Texcan 01121-734A5 or 01004-08-047
SAW25A-4	1	EL 414 ARTIC 4/14	Texcan 01121-744A5
SAW25A-6	1	EL 616 ARTIC	Texcan 04121-764A5
SAW25A-8	1	EL 816 ARTIC	Texcan 12701-08-014 or McMaster 7081K38

Work Order 201328

Customer _____

Number of Wires 3Date 2019-11-19Serial Number 5233809

Number of Cycles	Load (Lbs.)	Action	Pass/Fail
1	10,000	Check for Conductivity against all wires.	Pass
1	10,000	Check all wires for grounding against swivel body.	Pass
1	5,000	Check for Conductivity against all wires.	Pass
1	5,000	Check all wires for grounding against swivel body.	Pass
1	2,500	Check for Conductivity against all wires.	Pass
1	2,500	Check all wires for grounding against swivel body.	Pass
1	0	Check for Conductivity against all wires.	Pass
1	0	Check all wires for grounding against swivel body.	Pass

Test Conducted By:

Michel Lalonde

Technician

Submit

Signature:

Sylvie Pancher
QC/5 Small FAB / QA

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____

Date: _____

Work Order update only ☐

Work Order: <u>201328</u>	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS			
Part No. <u>SWA### Swivels</u>		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐
<u>SWA10A</u>		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐
NCR No.		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
		Large Fab ☐	Composite ☐	Supplier ☐	

Date : 2019-11-22

Step #:

QTY Effective :

MRB (QSI042) Approval

M Lee

Feb 01, 2018

Description Work Order Deviation

Disposition

- Use a combination of heatshrink tubing and RTV Silicone to create a watertight seal around all electrical connections.

- Use a D2728-1 Placard in place of the laser engraved Dart logo

- USE HEATSHRINK TUBING OVER ELECTRICAL WIRE (UNDER-200A) TO BUREAU CLAMPING SOLDER ON WIRE IS SUFFICIENT (0.025" APPROX. SQUARE)

These deviations are acceptable to carry out on the following swivels:

- SWA3
- SWA6A
- SWA10A
- SWA15A
- SWA25A
- PSWA25A

- 4440-0280002 M Lee
There is no impact on fit, form or function.

Completed By

ASATQY

Lead hand / Supervisor Approval Verification

 DAS
30
9-89

NOV 25 2019

QC / QA Coordinator Approval

AD

Root Cause

Environment	☐	No Re-verification
Design	☒	Operator
Doc/Data	☐	Offset/Setup
Equip/Tooling	☐	Supplier
Handling/Pre	☐	Training
Material	☐	Use for Testing
Internal Transport	☐	Poor Information
Tribal Knowledge	☐	Rushing
LOA	☒	Product Improvement
Substation	☒	Process Improvement
Past Expiry Date	☐	Manufacturing Process
Misidentified	☐	Past Due

Pressure/Forced

Bending

Centre Not Concentric

Cracks

Crimp/Kink/Ripple/Wave

Cuffs

Crushing

Heat Treat

Wave/Twist in Tube

Marks/Chatter

FAULT CATEGORY

Temperature/Cure

Set-up

BOM/Route

Broken/Damage/Defect

Inspection Incomplete/Unqualified

Contamination

Countersink

Cut Too Short

Instructions Incomplete/Unclear

Drill Holes

Power Loss/Surge

Folio/Program

Grain

Weld

Wrong Stock Pulled

Out of Sequence

Off-set

Misabeled

Fit/Function

Misaligned/off center

Positioned Wrong

Outside Dimensions

Over/Under tolerance

Part Incorrect

Part Lost/Missing

Part Moved

Drawing

Finish

Misread

Turning Sequence

OTHER :

